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Research Product 2014-08

Unit-Focused Escalation of Force Training Kit

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To protect non-combatants in the operational environment, U.S. Soldiers must apply escalation of force (EOF) procedures in uncertain and fast-paced situations. In response to Army needs, a prototype EOF Training Kit was developed to address methods for training critical EOF competencies. Included in the EOF Training Kit are tactical EOF scenarios for three mission types and three levels of expertise, along with executive and supporting materials. Two versions of each scenario are provided—interactive desktop simulation and video viewing. The EOF Training Kit underwent iterative internal review and revision during development. It was then reviewed by Soldiers (currently serving roles as trainer/mentors) from operational units and it was revised based on their feedback. This document describes the EOF Training Kit's characteristics, contents, organization, learning context, and presentation style. It includes the complete EOF Training Kit (enclosed DVD) along with suggestions for utilizing the contents.

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UNIT-FOCUSED ESCALATION OF FORCE TRAINING KIT

CONTENTS

	Page
Method	2
Description of the Escalation of Force Training Kit	3
Utilizing the Escalation of Force Training Kit	6
Recommended Improvements	7
References	9

APPENDICES

Appendix A. Escalation of Force Training Kit (Non-editable Files)	DVD
Appendix B. Editable Versions of Supporting Documents	DVD

UNIT-FOCUSED ESCALATION OF FORCE TRAINING KIT

In complex operational environments, Soldiers conducting counterinsurgency (COIN) operations often must work in and around local populations (e.g., Fite, Breidert, & Shadrick, 2009). As a result, both combatants (enemy Soldiers) and non-combatants (local civilians, workers, demonstrators, etc.) may intermingle on the battlefield. Protecting non-combatants is a paramount requirement for the U.S. Soldier (e.g., U.S. Department of the Army, 2007). Key tools in protecting non-combatants are the Rules of Engagement (ROE) and associated Escalation of Force (EOF) procedures. Soldiers must learn to assess and respond to threats from potential combatants in accordance with established ROE and EOF procedures.

Applying the ROE and EOF procedures is a serious challenge for Soldiers in the operational environment. On the one hand, they must engage enemy combatants effectively, often in urban settings, in order to accomplish their mission and protect themselves and their fellow Soldiers. On the other hand, they must distinguish non-combatants from enemy targets and react appropriately, typically in the midst of uncertainty and rapid change. Thus, Soldiers working within and around a local population must follow their commander's orders and make critical decisions involving appropriate use of force. They are expected to defend and protect with lethality and, at the same time, protect non-combatants while acting as socially responsible ambassadors.

To build EOF skills, Soldiers are trained to implement progressive steps to constructively channel the behavior of local citizens and/or potential combatants in dangerous situations. These steps include audible warnings, such as horns and sirens, visual warnings, such as flashlights and flares, and display of weapons and intent to use them, including warning shots and/or disabling shots (Center for Army Lessons Learned, 2009). These steps are designed to diminish the risk of non-combatants being mistaken for combatants and to help Soldiers better assess the tactical situation. Realistic EOF training must portray unexpected elements, conflicting information, and a dynamic decision environment that requires rapid choices. Effective training demands realistic tactical scenarios that can be used to plan and execute readily accessible EOF exercises. Thus, EOF situations necessitate visually detecting and distinguishing non-targets from targets and the rapid decisions that follow that identification.

Vowels (2012) has developed a model emphasizing the importance of cognitive mechanisms and processes that shape Soldiers' decisions and actions in EOF situations. The pre-decisional space model involves two major components—visual attention and visual memory, both argued to be essential in visual threat detection. The model holds that key cognitive factors, such as causal inference, influence information capture and processing in EOF situations. Through focused experimentation, the tenets of the model could be tested empirically and the model could be refined. Further, research examining how Soldiers apply EOF procedures and adapt to changes in the steps could better illuminate when and why effective procedures come into play and also how and why procedures break down. Such research would depend on valid EOF scenarios to support experimentation, with an eye to providing scientific evidence for improved EOF training. The current research effort led to the development of such EOF scenarios.

As part of its Army Technology Objective addressing Unit-Focused Training, the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) has developed a prototype EOF Training Kit. At the heart of the EOF Training Kit are tactical EOF scenarios that harness lessons learned by Soldiers during deployment along with contemporary simulation technology. The EOF Training Kit contains executive materials, how-to-train guidelines, files for interactive and video-viewing exercises, and supporting materials. The EOF Training Kit was designed to support unit training programs as well as applied EOF research.

By utilizing the prototype EOF Training Kit, unit leaders and trainers may realize these potential benefits:

- stronger unit training programs through expanded EOF training capabilities,
- more realistic EOF training events due to exploitation of contemporary technology,
- improvement of critical EOF competencies at the squad and section levels,
- savings of time and effort required to create training and assessment materials,
- more accurate measurement of Soldiers' EOF proficiency levels, and
- enhanced unit readiness through pre-deployment EOF training.

This document explains how the EOF Training Kit was developed and describes the final version of the prototype. It also explains how to utilize the EOF Training Kit for optimal payoff. The enclosed DVD contains (a) the complete EOF Training Kit as Appendix A and (b) editable files for supporting documents as Appendix B.

Method

The research that produced the prototype EOF Training Kit involved collaboration between ARI personnel and Soldiers from operational units at Fort Hood, Texas. Soldiers taking part in the interviews all had deployment experience, specifically with EOF situations; those Soldiers were sergeants through sergeants first class, responsible for training EOF skills in their units. Soldiers taking part in the formative evaluation were trainer/mentors responsible for training EOF skills across a variety of units; those Soldiers were also sergeants through sergeants first class. The project steps included (a) review and selection of EOF vignettes published by the Center for Army Lessons Learned (CALL), (b) interviews of Fort Hood Soldiers, (c) development and packaging of EOF scenarios and supporting materials, and (d) formative evaluation of the EOF Training Kit by Fort Hood Soldiers.

The purpose of the review of CALL vignettes was to create a combat-tested foundation for the EOF scenarios. The review focused on recent EOF lessons learned by units deployed in Afghanistan and Iraq (Center for Army Lessons Learned, 2007, 2009, 2011). The review yielded a list of EOF situations (mission types) commonly encountered in contemporary operations, along with insights on how EOF procedures are implemented; these situations included dismounted patrols, convoy operations, and traffic-control point operations. The list was examined for how well each situation could be represented using the Virtual Battlespace 2 (VBS2) simulation, the platform chosen early in the project for staging the EOF training scenarios.

From the reviewed list of common EOF situations, the research team selected 20 as high-priority situations for deployable units. The team included former Soldiers with deployment experience and with experience in EOF situations. Through iterative discussions combining operational experience, capacity of the available platform, and requirements for future research, the set of 20 situations were selected. During interviews at Fort Hood, Soldiers from operational units discussed a subset of the situations with emphasis on the factors that would influence on-the-spot decisions regarding appropriate level of force, as well as likely difficulties. Based on the input obtained from the interview participants, the team selected a small set of EOF situations offering high payoff for unit training.

The development of the squad-level training scenarios began with an analysis of the high-payoff situations in terms of their suitability for implementation using VBS2 capabilities and ability to serve as stimuli for future research. The analysis resulted in the selection of three mission types to frame the scenarios. For each mission type, the team outlined the tactical environment to accommodate three levels of EOF expertise (novice, intermediate, and expert). Next, VBS2 programming experts constructed the simulation files for each mission type and level of expertise, taking care to ensure that each scenario was suitable for individual and collective training. In a separate step, the simulation experts used the VBS2 software to produce video versions of each scenario, including versions with correct and incorrect outcomes. Supporting materials were also created to facilitate ready-to-implement training exercises. As the scenario and supporting materials emerged, they were integrated into a package dubbed the EOF Training Kit. An earlier ARI product developed by Cooper, Leibrecht, and Lickteig (2010) guided the current effort.

The EOF Training Kit underwent extensive evaluation and revision to incorporate feedback from internal experts and Fort Hood Soldiers. During development, the components of the EOF Training Kit were reviewed internally and refined in successive cycles. In formative evaluation sessions, Soldiers reviewed the scenarios and supporting materials and provided feedback. The Soldier feedback was used to finalize the EOF Training Kit.

Description of the EOF Training Kit

This section presents an overview of the prototype EOF Training Kit. The overview addresses the EOF Training Kit's characteristics, contents, organization, learning context, and presentation style. The complete EOF Training Kit is included on a DVD enclosure to this publication. Appendix A contains the primary (complete) version (.pdf, .wmv, .flv, and VBS2 files). Appendix B provides text and graphic materials in editable form (.doc and .ppt files) so users can tailor exercise materials to unit-specific needs and conditions.

Geared to the unit training environment, the EOF Training Kit offers an easy-to-use resource to help trainers and researchers prepare and execute low-cost exercises. The principal features include (a) all-inclusive scope, (b) independent scenarios, (c) built-in training options, (d) flexibility to tailor tactical conditions, (e) mix of primary and supporting materials, (f) streamlined presentation of contents, (g) contemporary digital delivery and navigation, (h) Soldier-friendly packaging, and (i) absence of security restrictions.

The contents of the EOF Training Kit include a Leader's Overview to support training program decisions, a Trainer's Guide with preparation and execution instructions, VBS2 and video files for tactical exercises, and supporting materials developed to enhance operational realism. The final contents are outlined in Table 1. The all-inclusive scope of the EOF Training Kit is intended to provide trainers a single source for EOF training materials. The contents enable trainers to manage the training cycle for one or more exercises from initial selection through execution and feedback.

The four sections listed in Table 1 reflect an early design choice to target specific information at trainees and trainers separately, and to organize working materials by type (simulation-based items versus mission context elements). The Leader's Overview and the Trainer's Guide contain just enough information to orient and guide busy unit personnel. From a user's perspective, the organization portrayed in Table 1 is largely transparent. A hyperlink navigational structure enables a user to follow a path suited to his/her immediate need for information or materials. The logic assumes the user will start with high-level information specific to his/her role in the training process. Once familiar with the EOF Training Kit's contents and his/her duties, the user is expected to proceed to the items needed to make a scheduling decision, determine resource requirements, prepare for a chosen exercise, or execute a training event. Hyperlinks enable the user to jump to exercise files, mission briefs, EOF-specific materials, etc. In short, the EOF Training Kit is designed to serve as a self-contained resource that makes a leader's or trainer's task as easy as possible when selecting materials for EOF training.

Table 1.

Contents of the EOF Training Kit

Section	Materials
Leader's Overview	Purpose, benefits and scope of the EOF Training Kit Exercise capabilities – missions, expertise levels, and training modes Operational credibility – CALL foundation, Soldier input, and feedback Research connection – summary of ARI's project and point of contact
Trainer's Guide	Purpose, benefits, scope and contents of the EOF Training Kit Training basics – target audience and Soldier competencies addressed Exercise capabilities – missions, expertise levels, and training modes General instructions – trainer's duties, EOF Training Kit utilization, and training mode selection Exercise instructions – how to implement VBS2 and video exercises Assessment and feedback – performance measurement, and After Action Review (AAR) guidelines

(Continued)

Virtual Exercise Files	Ready-to-use VBS2 files for each mission and level of expertise Ready-to-play video files for each mission and level of expertise Decision point video files that prompt EOF decisions at critical point(s) Ready-to-play video files that demonstrate correct and incorrect mission outcomes
Supporting Materials	Mission brief (storyboard and Fragmentary Order) for each mission and level of expertise EOF-related materials – ROE card, EOF card, and Be Wise Card Operational forms – Pre-combat Inspections (PCI)/Pre-combat Checks (PCC) checklists, patrol log, and Medical Evacuation report

The EOF Training Kit embodies an implicit training model that is familiar to operational units. Commanders and training officers at battalion and company echelons are expected to select and schedule training events that rely on materials from the EOF Training Kit. They can choose among the exercise options outlined in Table 2. A unit trainer (e.g., squad leader, section leader) is expected to take charge of the training process—preparation, rehearsal, execution, assessment, and feedback. For VBS2 exercises, the trainer most likely will obtain the support of technical experts in a simulation center. The VBS2 exercises build EOF assessment and decision skills through interactive role-playing and technology-supported feedback, while the video exercises foster learning through group discussion, behavior modeling, and conventional feedback. The exercises were designed to be conducted quickly and at relatively low time commitment. The built-in training options give leaders and trainers flexibility as they work to accomplish specific training objectives.

Table 2.

Exercise Options of the EOF Training Kit

Mission	Expertise Levels	Training Modes
Convoy Operation	Novice, Intermediate, Expert	VBS2, Video
Traffic Control Point	Novice, Intermediate, Expert	VBS2, Video
Dismounted Patrol	Novice, Intermediate, Expert	VBS2, Video

The EOF Training Kit's presentation style is geared for unit personnel. It was designed for Soldiers and then evaluated by them. The language of Soldiers is used throughout. Instead of prose, highly distilled "chunks" of information (mostly short bullets) are the norm. Where appropriate, information is packaged in chart or graphic form. Distinctive elements (e.g., bold or italicized font) serve to draw the user's attention to critical information or hyperlinks. Tables that simplify key EOF Training Kit features promote rapid assimilation of information. In essence, the EOF Training Kit's presentation features—streamlining, visual appeal, familiar

language—are designed to engage trainers and leaders in a concise, attractive milieu that encourages constructive utilization of the materials provided.

Utilizing the EOF Training Kit

Units can take simple steps to integrate the prototype EOF Training Kit into their training plans and programs. A list of the EOF Training Kit's scenarios can be inserted into the Commander's Training Guidance, along with guidelines for utilizing the family of exercises. A network Non-commissioned Officers (NCO) can maintain the electronic files on a server accessible to leaders and trainers. In addition to attaining the EOF Training Kit materials through a common access point, users may print hardcopies of supporting documents if desired. Further, simulation center staffers who support the unit's VBS2 exercises can maintain the EOF Training Kit files on their own server.

After obtaining the EOF Training Kit materials, leaders and trainers can study the Leader's Overview and/or Trainer's Guide to become familiar with the capabilities available in the EOF Training Kit. Responsible leaders or training officers can use the EOF Training Kit's information to select suitable exercises and place them on the unit training schedule. Designated trainers can study the Trainer's Guide to develop an understanding of the duties and procedures essential to conducting effective exercises. It is valuable for users (especially trainers) to preview sample videos and VBS2 exercises. These steps are best accomplished as planning or preparation activities at the training program level. The goal is to establish a solid understanding of the EOF Training Kit's scenarios, resource requirements, training conditions, and possible benefits.

Once training events that utilize the EOF Training Kit are scheduled, a prepare-execute-assess model works well for trainers responsible for the events. As a trainer prepares for an approaching EOF training event, she/he follows the pre-execution steps in the applicable "How to implement a VBS2 [or video] exercise" section. If the conditions of any VBS2 exercise(s) are to be tailored, help from VBS2 programming experts should be obtained to produce modified simulation files. As needed, the EOF Training Kit's supporting materials files in Appendix B can be edited to customize mission briefs, operational forms, etc. In this stage, it is valuable to prepare EOF-focused assessment form(s). During execution of the event, the trainer follows the execution steps in the applicable "How to implement a VBS2 [or video] exercise" section. The supporting materials from the EOF Training Kit are put into action in this stage, as the trainer manages the activities of the trainees. Following the process laid out in the EOF Training Kit helps keep the training process on track and optimizes Soldier learning. Assessment occurs at targeted points during the event, culminating in an EOF-focused AAR. The EOF Training Kit's guidelines in the "How to handle assessment and feedback" section may boost Soldiers' learning. In VBS2 exercises, the trainer uses simulation playback capabilities to enhance the AAR process. Finally, by using structured EOF performance measures, the trainer gains a clear picture of where the Soldiers stand on EOF decision making skills.

To fully leverage the EOF training events, trainers may utilize the assessment results to track possible improvement over time and determine follow-on training requirements. The performance measures from a series of training events may reveal the growth in EOF decision-

making skills. They may also point to additional training needed to strengthen specific EOF competencies. As the performance data feed into the Commander's Assessment, the unit can adjust the training schedule or specific training plans as appropriate. The process continues until the desired level of proficiency is reached.

In addition to guidance from unit leaders and trainers, the prototype EOF Training Kit could play an important role in building EOF competencies for contemporary operations. The scenarios developed as part of this research can be integrated with home station training, mission rehearsals, and in-theater drills. In the operational environment, each deployment brings new challenges that require Soldiers to adapt quickly to changing conditions. The flexibility of the EOF Training Kit enables modification of scenarios to keep up with emerging conditions. In addition, the scenarios can support research on EOF training approaches and tools. The EOF Training Kit's specialized capabilities may expand the scientific basis for improved EOF training methods and ultimately strengthen unit EOF training programs.

Recommended Improvements

A formative evaluation of the EOF Training Kit with Soldiers who currently train EOF was conducted. The formative evaluation assessed the suitability, usability, clarity, and content of the EOF Training Kit. Overall, the data from the formative evaluation was positive. Soldiers' responses indicate that the EOF Training Kit would be a welcomed and valuable addition to current EOF training. Soldiers gave consistent feedback regarding how they would make improvements to the EOF Training Kit, as shown in the following recommendations:

- ensure the actions depicted in the scenarios are consistent with current rules of engagement (ROE) and EOF procedures,
- streamline the EOF Training Kit by removing Standard Operating Procedure (SOP) related materials,
- ensure the scenarios remain adaptive to allow Soldiers returning from theater to incorporate their most recent experiences,
- empower trainers to develop and incorporate information gathered by Company Intelligence Support Teams (COIST) regarding Significant Activities (SIGACT) in the area of operations and Target Area of Interest (TAI) in the Mission Brief and maps, and
- limit the scenarios to the expert level.

In summary, refinement of the EOF Training Kit is recommended to address Soldier identified issues. Further research is also recommended to strengthen the foundation of EOF training and any programmatic research into EOF decision making. The ROE and EOF procedures are at the forefront of ensuring the safety of military and civilian personnel and as such merit additional research to enable Soldiers to execute their duties to the highest possible standards.

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Appendix A

Escalation of Force Training Kit

Appendix A is on the enclosed DVD which contains a library of non-editable PDF files.

Appendix B

Editable Versions of Supporting Documents

Appendix B is on the enclosed DVD which contains editable files of supporting documents.

These files are provided for those who will tailor the supporting materials.